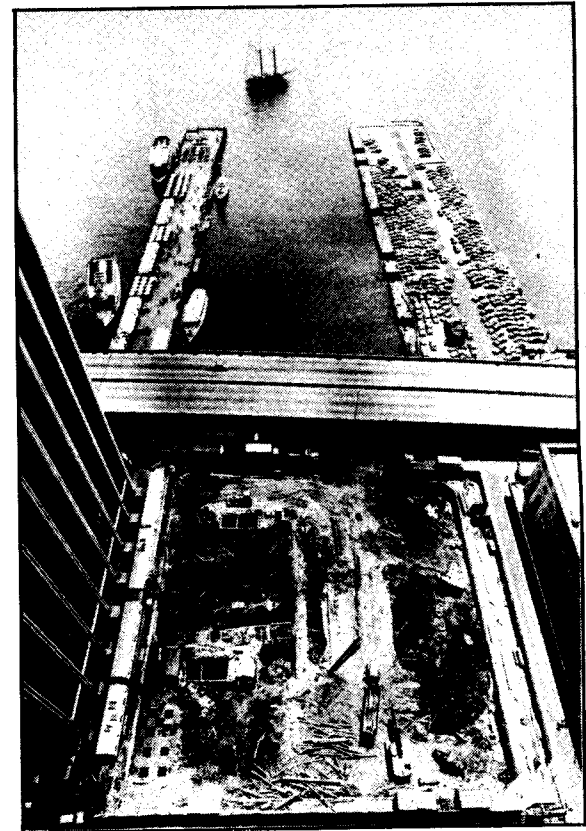


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# Archaeology in New York City

edited by Anne-Marie Cantwell  
and  
Diana diZerega Wall



Professional Archaeologists of New York City,  
Special Publication No. 1.

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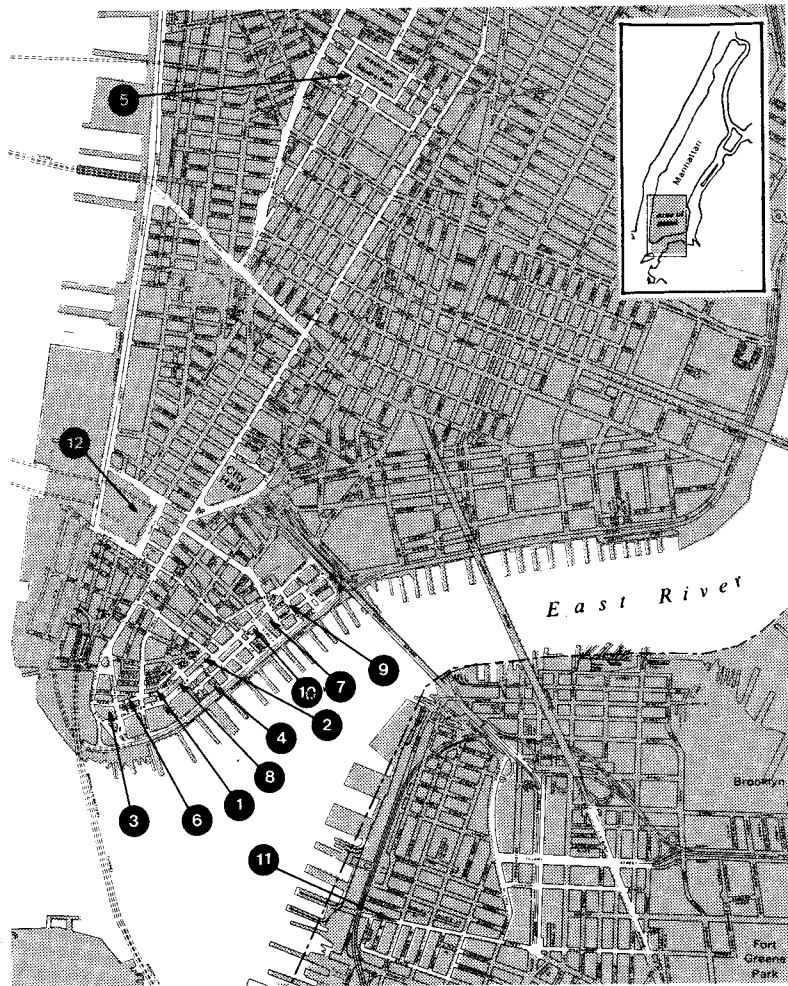
Joan H. Geismar  
Roselle E. Henn  
Betsy Kearns  
Daniel Pagano  
Arnold Pickman

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Cover: The Assay Site in lower Manhattan, looking east.

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Map of lower Manhattan and Brooklyn Heights, showing the archaeological sites that are mentioned in the text.



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1. Stadt Huys Block
2. 75 Wall Street
3. 17 State Street
4. Assay
5. Sullivan Street
6. Broad Financial Center

7. Telco Block
8. 7 Hanover Square
9. 209 Water Street
10. 175 Water Street
11. Freundlich
12. Tijger (?)

## PREFACE

The Professional Archaeologists of New York City (PANYC) was founded in 1980. The organization is made up of professional archaeologists who are working on issues related to the archaeology of New York. Our goals are manifold. We act as guardians to protect the city's rapidly disappearing archaeological heritage. We also provide a forum for local archaeologists to discuss their professional concerns. Finally, we are especially committed to developing an awareness of the city's rich archaeological heritage among the general public. To this end, each spring PANYC sponsors an afternoon public program at a local museum where we discuss our current projects. This booklet is PANYC's first publication for a general audience. It grew out of a public program held at the Museum of the City of New York in 1986.

The editors would like to thank the authors, all experts in their fields, for their contributions. We also thank the members of our advisory board for their help at all stages of preparing this publication. In addition, we are grateful to Sharon Slowik for the drawings and Rob Tucher for some of the photographs. Finally, we are greatly indebted to Kate Grinnell and Eugene Reyes for their help in turning the manuscript into a finished product. Without them, this booklet would never have gone to press.

This volume is dedicated with affection and gratitude to the memories of Lynn Ceci and Bert Salwen, past presidents and founding members of the Professional Archaeologists of New York City. They both made outstanding contributions to our understanding of the city's past.

Anne-Marie Cantwell  
Department of Anthropology  
Rutgers University - Newark

Diana diZerega Wall  
South Street Seaport Museum  
New York City

## INTRODUCTION

When most New Yorkers think of archaeology, they think of Egyptian pyramids, Greek temples, Mayan ruins, or Chinese tombs. They are surprised to learn that there is an archaeology of New York City. Yet the city is extremely rich in archaeological sites that document its history from the time when people first arrived in the area more than 12,000 years ago up to the present.

Today, archaeologists in New York are actively engaged in preserving, studying, and, when necessary, excavating sites that hold the keys to the past of one of the largest cities in the world. We work in areas ranging from the concrete canyons of lower Manhattan to the more rural parts of the other boroughs. But no matter where we are, we are almost always working under tight schedules, trying to rescue the city's past before construction destroys it in building the city's future.

These archaeological sites provide most of the information that we have about the early history of the Native Americans, who arrived in what is now the metropolitan area more than 12 millennia ago. The sites also give us new perspectives on the ways of life of all the peoples living here during the Dutch and English colonial periods as well as during the city's more recent past.

This book is an introduction to the archaeology of New York City. It is made up of articles written by some of the archaeologists who work here. We explain how we work in New York, show how we use some commonly-found artifacts as clues in deciphering our city's past, and, finally, suggest additional readings and places to go to find out more about local archaeology.

The Editors

## HOW IT HAPPENS

Daniel N. Pagano

## NEW YORK UNCOVERED

Although many people think of archaeologists as excavating in the field, in fact digging is only a small part of what we do. Some of us work for governmental agencies, developing and enforcing regulations that protect archaeological sites. Others are "contract archaeologists," working either for large firms or as independent consultants on archaeological projects required by the government. Still others teach at universities or work in museums, taking care of collections that can be used in exhibits or for research. However, no matter where we work, we are all painfully aware that most of the city's sites have been destroyed by development—there are relatively few sites left. Therefore we want to preserve them for the future whenever possible. That is why no matter where we work, we only excavate when there is an important research question to address or when a site is slated for destruction.

Even once the decision has been made to excavate, digging is only one part of a long and complex process. Before we start, we must negotiate with the owner of the site and often with governmental agencies for permission to conduct the excavation. We also must do a thorough study of the history of the site in order to plan the excavation properly. Only then do we actually begin to dig. The papers in this section describe the negotiations that might precede an excavation, the planning process, and the excavation itself.

*Editors' note: The city's archaeological sites are excavated under a variety of circumstances. Some excavations are conducted as part of research programs at universities or museums, while others are required by federal, state, or municipal regulations. Most of the large-scale excavations in the city have been mandated by one of these three sets of governmental regulations. Federal- and state-mandated projects are overseen by the state's Historic Preservation Officer and are administered by the governmental agency concerned. Municipally-mandated projects are overseen by the City of New York-Landmarks Preservation Commission. The following paper by Daniel Pagano, Urban Archaeologist with the Commission, describes this municipal process.*

In 1977 Mayor Abraham D. Beame signed Executive Order 91 which authorized the city to conduct environmental review under what today is known popularly as CEQR (City Environmental Quality Review). CEQR protects the city's land, air, water, and floral and faunal resources from being compromised by large-scale development. It also prevents the impairment of the character or quality of important historical, archaeological, architectural, or aesthetic resources. CEQR is activated when a developer or city agency applies for a discretionary permit for a project requiring a variance under current city zoning regulations.

In order to make CEQR effective in dealing with the city's archaeological heritage, the Landmarks Preservation Commission hired its first Urban Archaeologist in 1980. This archaeologist is responsible for evaluating the archaeological potential of parcels of land that are proposed for development under CEQR.

If the Urban Archaeologist identifies the parcel as having archaeological potential, the developer then

hires an archaeologist to conduct a documentary study of that parcel. Fewer than 20% of all projects that are reviewed require such a study. This study provides a history of the parcel and evaluates its potential for the recovery of archaeological deposits important to the city's heritage. Once the archaeologist hired by the developer has completed the documentary study, it is submitted to the Landmarks Preservation Commission. The Commission's Urban Archaeologist reviews it for accuracy and substance, and decides whether or not further archaeological investigation is needed.

When a land parcel under CEQR review has been determined to have archaeological potential, the developer hires an archaeological team to investigate. A scope of work for testing is prepared by the archaeological team and reviewed by the City's Urban Archaeologist before field work is authorized. The excavations begin with testing to see if there are in fact archaeological deposits on the land. A report of that testing is then submitted to the Commission's archaeologist for review and comment. Fewer than 20% of all CEQR projects for which documentary studies are conducted require field testing.

If the report on the testing demonstrates that there is an intact archaeological site on the parcel, then a full-scale excavation is required. This is the case in fewer than 1% of all projects that are reviewed under CEQR. Full scale field excavation is one of the most complex activities in the CEQR archaeology process. The Commission's archaeologist reviews and approves the excavation plan, and monitors the progress of field excavations once they begin. When field excavation, laboratory processing, cataloguing and analysis of artifacts are all completed, a report is prepared and submitted to the Commission's archaeologist for review and approval. These reports are available to the public at the Municipal Library and are on file at the Landmarks Preservation Commission.

An additional benefit to the public resulting from CEQR is the interpretation and exhibition of New York City's archaeological heritage. So far, there are three exhibits in the city which have resulted from the CEQR process. These are located at 85 Broad Street, 75 Wall Street, and 17 State Street (see map and Afterword).

What happens to sites that are not covered by the CEQR regulations? In cases where federal and/or state funds are used in a development project not subject to CEQR, archaeological sites may be protected under similar federal or state environmental or historic preservation laws. Projects with federal and/or state funds that are administered by the City of New York are reviewed for archaeological concerns by the Commission's Urban Archaeologist.

Archaeological sites can also be listed on the National or State Register of Historic Places. Such sites are protected from development funded by the state or the federal government. However, registered archaeological sites are not always protected from private development, vandalism, or looting unless they are on federal- or state-owned land. A solution to this problem might be to establish a procedure to designate and protect archaeological sites and archaeological districts in New York City by local law. This is currently done by many cities and counties across the nation in order to protect archaeological resources from destruction and looting.

There is another way that archaeological sites might be protected. This would involve requiring archaeological review and clearance before a building permit for construction is issued by the city's Department of Buildings. Alexandria, Virginia, a city with a population of fewer than one hundred thousand people, has such a program. However, in order for a similar solution to work in New York, it would be necessary to find a creative way to allow an applicant for a building permit to meet archaeological requirements without undue hardship.

New York has a rich archaeological heritage. It spans approximately 12,000 years of Native American occupation. The Native American heritage includes trails, camp sites, rock shelters, quarries, cemeteries, shell middens, fishing and hunting camps, as well as other kinds of sites. It is interesting to note that Broadway in Manhattan is believed to follow the path of an ancient Native American trail.

The city is also full of archaeological sites from over 300 years of historic settlement. Some places in lower Manhattan have thirty feet of continuous archaeological deposits sealed beneath the surface like layers in a cake. Artifacts found in these deposits range from those used by Native Americans and by Dutch and English colonists to those left by more recent Americans. Archaeological sites can be found in many places—under city streets, sidewalks, in backyards, and below the basements of modern buildings. But no matter where they are found, these sites contain valuable information about New York City's past. It is important that they be protected.

## BEFORE WE DIG

Betsy Kearns

*Editors' note: The first phase of all archaeological work—whether part of a longterm research program or a government mandated project—is planning. Betsy Kearns, urban archaeologist and partner in Historical Perspectives, Inc., describes some of the steps that archaeologists must take before a shovel even touches the ground.*

Before archaeological excavation can begin at a particular location, there are basic questions that the archaeologist must ask. The questions are: Was there ever an archaeological site at this place? If so, is it possible that the site still exists? If a site does exist, where are its boundaries? Methods and techniques have been developed to answer these questions and to cope with the specific problems likely to arise in digging in the city.

First of all, there are many different kinds of archaeological sites in New York. There are Native American sites dating to the prehistoric period before the European arrival, and there are historic sites, which date from the European colonization of the city up to the present. These sites can occur in rural settings that still exist in places like Pelham Bay Park in the Bronx, or in an urban context like the Wall Street district of lower Manhattan. The locations vary widely from peaceful countryside to vacant city lots, all within the city limits.

Archaeologists must always keep in mind that New York City is just that—a city. In preparing for an urban dig, we must not only do the planning necessary for any excavation, but must also be prepared to confront problems particular to an urban setting. For example, we must expect a series of logistical headaches, ranging from very deep overburden (or layers of material having no archaeological value), to mazes of underground utility lines and pipes, to high water tables.

These and other factors invariably present a unique set of circumstances and problems on each site. Thus, archaeologists do a great deal of planning before they actually begin to excavate.

Historical research is an important part of planning. We study the history of a land parcel in order to find out whether there was ever an archaeological site at that particular location. Reports of recent archaeological investigations, local histories, and other records are consulted. There is an enormous range of material available, especially in studying historic-era sites. For instance, municipal and institutional archives contain such documents as building records, property ownership records, census data, maps and photograph collections. Historical societies and libraries have documents relating to every imaginable subject, from the origin of street names to business directories for local merchants and residents. (One archival gem, discovered when research was being done on Sixth Avenue, was a "Gentleman's Directory by a Free Lover," which listed the street addresses and special charms of all the brothels located in Manhattan in the year 1870.)

Historical accounts offer invaluable information in the quest to find out how a parcel of land was used over time and who used it after the European settlement. Unfortunately, the same wealth of documentary sources does not exist for the earliest Native American sites. Native Americans did not keep written records of their own history until fairly recently, relying instead on oral traditions to preserve their past. Some of these can provide clues to understanding Native American life before the arrival of the Europeans. There are a few accounts by early European settlers and explorers describing Native American ways of life. These early records, while often biased by European attitudes of the time, also offer hints to archaeologists. In addition, a number of early 20th-century writers such as Reginald Bolton and Alanson Skinner did their archaeological work before many early Native American sites had been

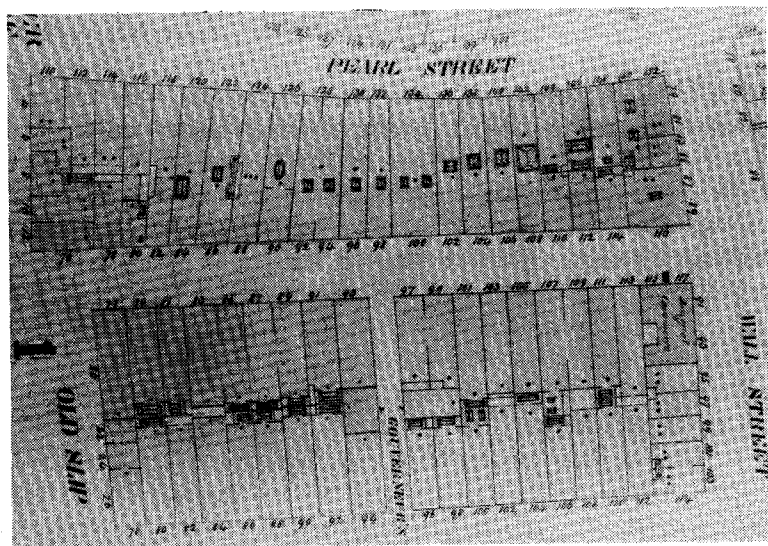
Pearl Street				
James H. Adams	house	145	2900	100
Henry S. ...	d.	141	2800	
...	d.			200
...	d.			1000
...	d.			100
...	house	146	2200	2500
...	d.	142	2200	
...	d.	160	2100	
...	ind.			100
...	house	164	2500	1200
...	ind.			100
...	house	162	2900	
...	ind.			500
...	house	160	2300	
...	house	158	3100	
...	house	156	6700	
...	d.			200
...	ind.			200
...	ind.			100
...	house	152	2900	300
...	d.	150	2900	3000
...	d.	148	2000	
...	d.	146	2500	700
...	house	144	2000	
...	d.	142	2000	
...	house	140	4000	300
...	d.	138	3300	
...	d.	136	2100	200
...	d.	134	2300	250
...	d.	132	2300	1000
...	d.	130	2100	1000
...	d.			200
...	house	127	1800	1000
...	d.	125	1700	
...	d.			100
			84700	17400

A page from the city tax records, listing tax payers on Pearl Street in 1808.



obliterated by the inexorable march of urbanization. They also had available to them the memories, reports, and collections of a generation of earlier archaeologists who had observed an even greater number of sites before they were destroyed.

The study of all of these sources of information helps archaeologists to locate the areas where early Native Americans lived and worked in southern New York. However, the topography of many parts of the city has vastly changed. What might once have been a hill overlooking a stream where a hunter could watch for game might now be gone. The hill may have been graded and the stream re-routed to build a huge condominium. Here again, early historical accounts and maps suggest what the land once looked like.



A page from a 19th-century atlas showing (at the top) the location of the 75 Wall Street site.

As you can imagine, maps are especially important because they offer many types of information, such as the locations of 18th-century mills, 19th-century railroads, or the plots reserved for burial grounds in the young, rapidly expanding city. Maps also help us chart

the changing shoreline, showing the growth of the city through the installation of landfill over the last 300 years. Beginning in the mid-19th century, map-makers began to publish atlases for each borough which we use to trace the use of individual land parcels through time.

We also look at the records of soil borings that were done for engineers as part of earlier construction projects in the site area. These might show the depth of the water table below the ground surface or the amount of recent rubble and overburden lying above possible archaeological remains. Such deposits would have to be removed by such heavy equipment as a backhoe before the actual archaeological excavation began.

Finally, an important part of planning is interviewing people including not only local historians, archaeologists, and architects, but also people who know or knew the area well. One serendipitous instance occurred when an employee at the city's Buildings Department told an archaeologist that a modern street level parking lot in Chinatown was once a basketball court sunk ten feet below ground. This was helpful to the archaeologist who was researching the history of the parking lot, because it indicated that the uppermost ten feet of the area had been filled in recently.

Unfortunately, once research has shown that there probably are still important archaeological remains at a site, it does not mean that the archaeologists, armed with trowels and shovels, just begin to dig. That happens only in the movies. There are lots of not very glamorous details to take care of before the fun starts. Like archaeologists working everywhere, we must prepare budgets for both the excavation and subsequent analysis of the finds. We also have to negotiate with the site's owner, and with any developer and government agency that might be involved in the project. In addition, plans have to be made for the permanent care of the finds at a suitable museum or repository.

Archaeologists working in the city have to deal with even more headaches. Con Edison must be contacted to see where their electric lines cross the site; it wouldn't do to blow out the power in the Stock Exchange. Permits from city agencies must be obtained if we need to use their services—for example, if we want to use water from a nearby hydrant, or if we need to close a street to dig beneath it. We also may need to rent a portable toilet. If we need equipment such as bulldozers or water pumps, we try to negotiate as efficient a work schedule as possible with construction managers and unions because this equipment is very expensive to use. We also have to worry about safety and security. We need watchmen and fences to protect the public, the archaeologists, and even the site itself. It is only after all these details are attended to that the excavation can begin.

## THE EXCAVATION

Arnold Pickman

*Editors' note: After the background research is done and the logistical arrangements are made, we are finally ready to begin to dig. Arnold Pickman, an archaeological consultant who has worked extensively in New York City, describes how we excavate in such heavily urbanized parts of the city as lower Manhattan. But no matter where we dig, the actual excavation techniques that we use are much the same.*

One of the questions which archaeologists are most frequently asked is: "How do you know where to dig?" Archaeologists working in rural areas can often be guided by artifacts found on the surface of farmers' fields. Urban archaeologists, on the other hand, must be guided by the results of historical research which indicate locations where structures once stood. Archaeological deposits are often found near these structural locations.

Most of the lower Manhattan sites underwent a series of building and demolition episodes during their history, with the most recent structures having been demolished before archaeological excavations began. Some were used as parking lots immediately prior to excavation, while others were under modern streets. The first step in the excavation of such sites is the removal of the overlying pavement using heavy construction equipment, including front end loaders, backhoes, and jackhammers.

Once the pavement is removed, archaeologists often find the basement walls and floors of the last structures to stand on the site. The cellar holes from these buildings are filled with rubble from the demolition of the structures. This debris is removed with a backhoe, exposing the basement floors. The floors are then removed to see if there are archaeological deposits beneath them.



Excavating in a Greenwich Village backyard.



Screening in a Greenwich Village backyard.

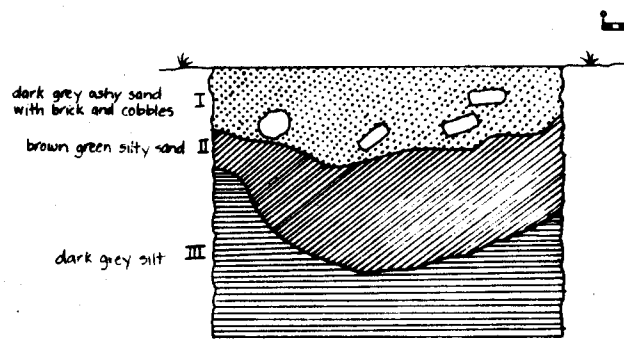
Once the most recent basement floors are removed, we could encounter the floor of an earlier building, an early backyard, or even landfill, which may have been used to raise the level of the ground before construction took place. Landfill has been found on several Manhattan sites, and has yielded important information about the city during the time when the fill was deposited.

Once the most recent basement floors are removed, we begin careful excavation by hand, using trowels and shovels to explore the underlying deposits. At the Assay Site, excavation exposed the basement floor of an earlier building—a grocer's warehouse which had burned in the Great Fire of 1835. After this discovery, additional excavation revealed some of the grocer's stock of coffee beans, nutmeg and other spices, and imported French wines, which had been stored in baskets, barrels, and crates in the basement at the time the building burned.

Archaeologists are particularly interested in backyards because they are the location of what we call "features." Backyard features include cisterns (tanks for storing water underground), privies (or outhouse pits), and wells, all of which are usually lined with stone or brick. After these features were no longer used for their original purposes, they were often filled up with trash. Because we often obtain our most valuable information about life in the past from what people threw away, these deposits are especially important. For example, archaeologists working at the Sullivan Street Site near Washington Square in Greenwich Village uncovered a privy containing a great quantity of domestic debris, including hundreds of glass and ceramic dishes, which revealed details of life in a wealthy doctor's household in the mid-19th century.

Although the details may vary according to the nature of the site, the basic elements of the excavation process that we use are the same. First of all, the excavation unit—a square or trench—is laid out on the

ground with its boundaries marked with string. Using shovels or trowels, we then begin to excavate the soil in the unit. Shovels are used for heavy work, while trowels are preferred for such fine work as exposing floors. No matter which tool we use, we excavate each layer of soil separately, since each layer represents a separate event in the past. The event can be a natural or geological one, like a layer of silt deposited by a flooding river, or a cultural or man-made one, like a trash dump. The depth and location of each layer are recorded and the layer itself is given an identifying number. Each layer is described on a record sheet.



North Wall of Feature 3  
The profile of a privy in a Greenwich Village backyard.

The soil removed from each layer in the excavation unit is screened, usually through 1/4 inch mesh. The soil passes through the mesh and any artifacts that were in it remain in the screen. The artifacts are then placed in a bag labeled with the identifying number of the layer where they were found. All artifact bags are later sent to the laboratory to be processed.

As we peel down each square layer by layer, we try to keep the walls of the square as straight as possible. After each unit is excavated, we scrape its walls with a trowel so that the relationship among the layers of soil noted during excavation can be seen more clearly. This soil "profile" is photographed and drawn, with each of the various layers described by its color and texture.

The profile is a key element in analyzing the excavation unit. Because each layer was deposited before the one that overlies it, and since each layer represents an event that occurred in the past, the profile helps tell us the sequence in which these events took place. We also make a map of the entire site, showing the location of each excavation unit and feature. After the fieldwork is over, the archaeologist still has much hard work ahead in the laboratory. It is only after the laboratory analysis is completed that the archaeologist can begin to understand the events that took place at the site and the lives of the people who participated in them.

## NEW YORK RECOVERED

After the excavations are over, the archaeologists move into the laboratory. There, they study the field records, wash and analyze the artifacts, conduct additional historical research, and compare their finds with those from other, related sites. Next, the results of all these lines of investigation are integrated together into a final report that not only describes the excavations but also reconstructs the lives of the people who once lived and worked at the site.

In this section, we show how the analysis of some common artifacts from a variety of sites—dating from the early Native American, Dutch and English colonial, and even later periods—can provide archaeologists with clues to understand the city's long and diverse history.

## STONE TOOLS

Annette Silver

*Editors' note: Native Americans were the first people to live in the area that is now New York. They arrived more than 12,000 years before the European settlement in the 17th century. For much of this long period, archaeology provides most of the information that we have about Native American ways of life. As Annette Silver, consulting archaeologist with TAS Archaeological Services, demonstrates, objects made of stone are among the most common artifacts found at Native American sites, and are especially useful in reconstructing the long and diverse Native American past.*

Prior to European contact, Native Americans fashioned the objects that they used in all aspects of their lives from a wide array of raw materials. These included stone and other minerals like clay and copper; bone, hide, shell and other animal products; and wood and other plant materials. Unfortunately, the objects made of most of these materials have been lost to us because the materials themselves did not preserve well in the ground. Artifacts like baskets, clothing, and even houses, which were made primarily of organic materials, for example, are bio-degradable and decompose, especially in the variable climate of coastal New York. Although archaeologists do find ceramic objects at many local sites, the Native Americans only introduced ceramic technology relatively recently, some 3000 years ago. Artifacts made of stone, on the other hand, not only preserve well but were also made and used by all of the Native American groups that lived in the New York area. Therefore, stone tools provide archaeologists with a good deal of the information we have about the more than 12,000-year history of the Native American peoples who lived here before the European invasions.

A collection of stone artifacts from a site in the New York City area might include spear or arrow points, knives, drills, smoking pipes, scrapers, axes, ornaments, hammers, anvils, stones used for grinding foods, and stone flakes and other debris left over from making tools. The challenge for archaeologists is to see how much information about the past can be teased from such an assortment. These artifacts might tell us the period when the Native Americans used a particular site, what they did there, how they made their tools, and where they got the raw materials to make them.

Archaeologists have long recognized that specific kinds of spear points and arrowheads were used in particular regions at particular times. We know this because the sites where these tools were found have been dated by radiocarbon (C14) and other dating techniques. For example, we know from radiocarbon dates

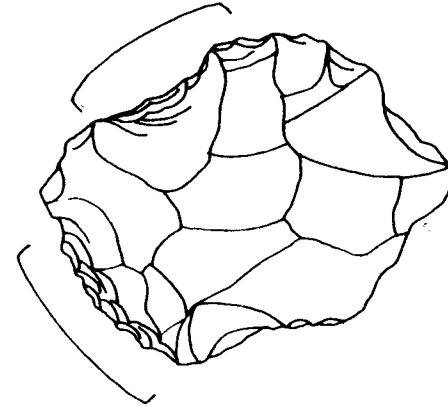


Orient Fishtail spear point, c. 1000-700 B. C.

on Long Island that a style of spear point called the Orient Fishtail was used from around 1000 B.C. until about 700 B.C. Therefore, the presence of these Orient Fishtail points at the Smoking Point site on Staten Island enabled us to date all the objects that were found with the points to that period.

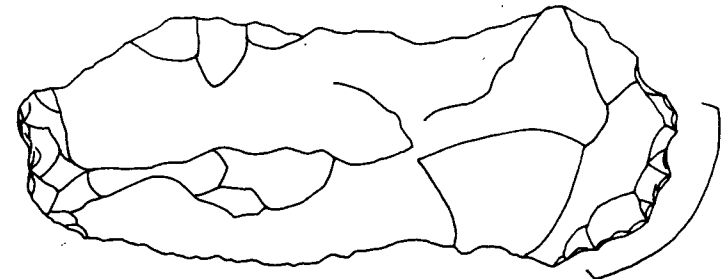
The analysis of stone tools can also tell archaeologists what the tools were used for. Stone tools that were used to process soft materials such as hides show patterns of wear on their working edges that are quite distinct from those found on tools that were used to carve bone or shape wood. This kind of information can help archaeologists interpret what the Native Ameri-

cans were doing at a particular site. We can then identify sites as hunting camps, fishing camps, or villages where many different kinds of activities took place.



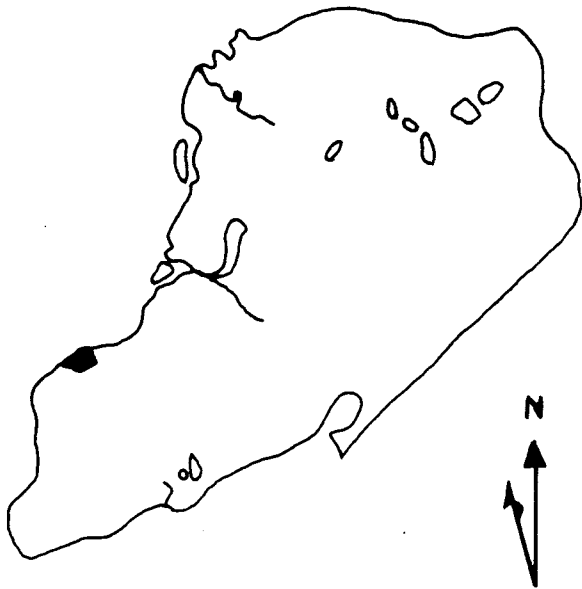
Scraper used for working hard materials like bone or wood.

The analysis of stone tools can also tell archaeologists how the tools were manufactured and where they were made. For example, the presence of hammerstones (used to knap or shape tools out of quartz, argillite, chert, and other stones), along with large stone flakes knocked off in the preliminary shaping of



Scraper used for working soft materials like hides.

a tool and the smaller flakes removed in a tool's final shaping, would suggest not only that people were making tools at that particular site but would also show the steps involved in making them. At another site, archaeologists might find only broken spear points and small flakes removed in sharpening spear points or other tools. These artifacts would suggest that the Native Americans did not make the spear points at this site, but rather had brought them there ready-made, resharpened them, and subsequently broke and discarded some of them. These inferences would additionally help archaeologists identify this site as a hunting camp. Stone tools were not always discarded after they broke. At the Smoking Point site on Staten Island, for example, archaeologists found broken spear points which had been subsequently re-cycled into knives, scrapers, and other tools.



Map of Staten Island, showing the location of the Smoking Point Site.

Stone tools can also provide information about the socio-economic lives of the Native Americans who lived in the New York area. They used a wide variety of raw materials in making their stone tools. In addition to those that are locally available, such as quartz, they also used many other kinds of stone from different places. Archaeologists have found tools made from cherts from the central Hudson River Valley, brightly-colored jaspers from Pennsylvania quarries, argillite from New Jersey, and steatite from Connecticut. In comparing the kinds of stone used by Native Americans during different time periods, archaeologists can begin to make inferences about patterns of trade and interaction between the peoples in New York and other areas.

During the Orient period (from around 1000 to 700 B.C.), for example, bowls made of steatite or soapstone were commonly used by the people living in coastal New York as well as in southern Connecticut. Since the nearest steatite quarries are in Connecticut, archaeologists can infer that the people living on both the New York and Connecticut sides of Long Island Sound were in contact with each other. This interpretation is supported by similarities in other aspects of the culture of the peoples living in this area at this time.

Archaeologists studying the prehistory of New York City are essentially recovering and analyzing the equivalent of the present-day tool chest, kitchen drawer, tackle box, and gun cabinet after their contents have been used, broken, lost, or discarded. Nonetheless, these stone tools are beginning to provide part of a picture of the diverse ways of life of the many groups of Native Americans who lived here for more than 12,000 years.

## CLAY TOBACCO PIPES

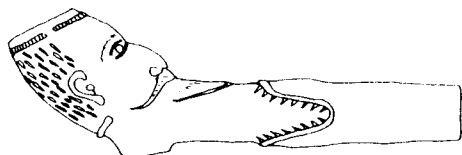
Diane Dallal

*Editors' note: Tobacco was originally native to the Americas, but the Europeans quickly adopted the practice of using it. They smoked tobacco in clay pipes, which were fragile, easily broken, and therefore frequently replaced. These fragments are ubiquitous artifacts on New York sites from the 17th through the early 20th centuries. As Diane Dallal, pipe expert and historical archaeologist, shows, these common artifacts provide valuable information for archaeologists.*

Clay tobacco pipes can be very useful tools for archaeologists in interpreting their sites. Pipes can be examined in a number of different ways to determine their date of manufacture and use; the name of the man, woman, or company that made them; and the place where they were manufactured.

There are three aspects of pipes that allow us to use them as dating tools. First, there were changes in the size of the bore or smoke-hole diameter of the pipe stem. Secondly, pipes underwent a number of stylistic changes. Finally, and most fortunately for archaeologists, pipe makers often stamped their pipes with their own distinctive marks.

Archaeologists have noted that there is a gradual but continuous trend through time toward the reduction of the size of the bore or smoke hole of the pipe stem. The bore diameters of pipes made in the 17th century tend to be relatively large, ranging in size from  $8/64$  to  $9/64$  of an inch. By the late 18th century the size had decreased, and bores were often only around  $5/64$  of



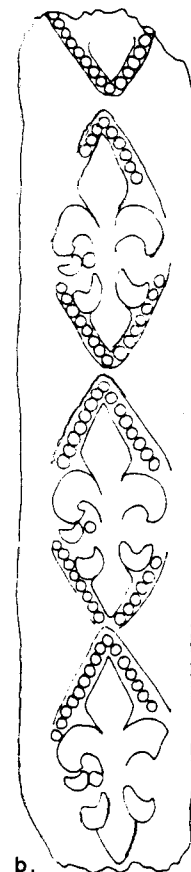
Pipe showing Sir Walter Raleigh and the crocodile.



an inch in diameter. Archaeologists measure the bores of the pipes from their excavations with drill bits, and then use the measurements to begin to make inferences about when the pipes were made.

Pipes also changed stylistically through time. Ornamentation in the 17th century was quite different from that in the 18th or 19th centuries. In sites dating from 17th-century Dutch New Amsterdam, archaeologists find pipes ornamented mainly on the stems, with molded diamond shapes, runs of dots, fleur de lys, and rouletting as popular forms of decoration. Elaborately decorated bowls were also made during this period. One Dutch motif, particularly favored by sailors, is the Sir Walter Raleigh pipe. Sir Walter was known as a heavy smoker. The motif consists of a bowl in the shape of Sir Walter's head, with the stem entwined with a crocodile. Some think this pipe illustrates the folklore tale of Sir Walter being swallowed by a crocodile after falling overboard. The crocodile subsequently spat him out, as he was so rank with the stench of tobacco. The popularity of this motif in predominately Protestant Holland was probably due to the fact that Raleigh was deeply involved in the tobacco trade and was considered a hero after his execution by the anti-smoking James I of England whose inconsistent attitudes toward religion made him unpopular.

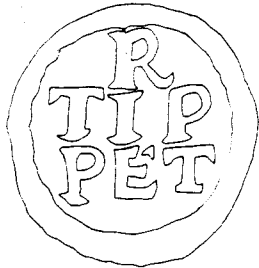
In sites dating from mid-18th-century British New York, archaeologists frequently find elaborately molded pipe



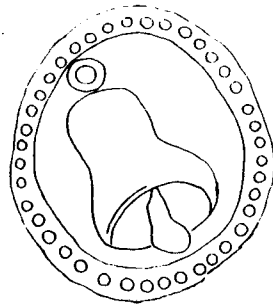
a. Pipe bowl showing the feathers of the Prince of Wales.  
b. Detail of a pipe stem with the fleur de lys motif.



bowls decorated with the British Royal Arms, heraldic figures, masonic emblems, and the feathers of the Prince of Wales. Most pipes from early 19th-century American sites are either plain or decorated with molded fluting on their bowls.



Maker's mark of the Tippet family.



Dutch pipemaker's mark, 17th century.

The shape of pipes also changed through time. Early 17th-century pipe bowls were small, with swollen bellies contracting slightly at the rim. These bowls were attached at an obtuse angle to thick, crudely-made stems. By the early 18th century, pipes from the city's archaeological sites had longer and thinner stems. As the price of tobacco declined, smoking became more popular and the size of pipe bowls increased as well. In the 18th century, both English and Dutch pipe makers also began to set their pipe bowls more erectly, at right angles to the stem. Archaeologists therefore also use information on the shape of pipes to help date sites.

Pipe makers often stamped their products with distinctive marks. These often consisted of the makers' initials. We try to trace the initials not only to specific pipe makers, but also to the period when that maker was producing pipes. To do this, we examine historic records like marriage licences, freedom rolls (which give the date of a pipe-maker apprentice's release from training), wills, deeds, and parish registers. However, a maker's mark cannot always be assigned to a specific individual—marks were bought, sold, rented, inherited, and even plagiarized.

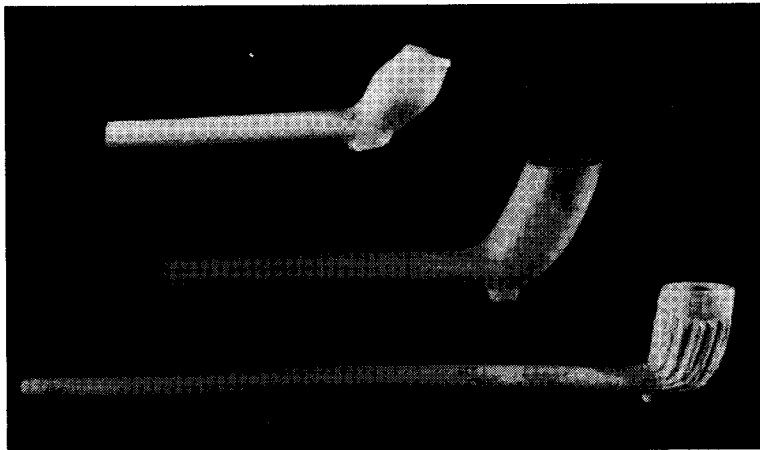
To make matters more complicated, several generations of a pipe-making family often used the same mark. For example, there were three generations of Robert Tippetts, active in late 17th- and early 18th-century Bristol, England, who all used variations of the same marks. In addition, there are marks which were used by many makers. The "TD" mark, for example, was used by different makers in many different countries throughout the 19th century, making it very difficult for us to date these pipes and to find out where they were made.

Dutch pipe makers used three different types of marks. Like their British counterparts, some used the maker's initials which were sometimes crowned or joined together. Numbered marks, both with and without crowns, were also popular. Seventeenth-century Dutch marks also often represented mythological figures, objects such as bells, or animals, as well as scenes from everyday life (like a milkmaid carrying buckets) or comical marks (like "Jacob on the dung hill"). In 1739, a shield-shaped mark with the Arms of the City of Gouda was instituted to distinguish fine-quality pipes from the ordinary ones made in that city. This mark is very helpful to archaeologists—it tells us not only that the pipe was made in Gouda, but also that it was not made before 1739.

The location of the mark on the pipe is also useful as a time marker for archaeologists. Earlier marks were stamped on the base of the pipe's heel. In late 17th-century London, pipe makers moved their marks and began to place their initials on either side of the heel. Late 17th- and early 18th-century Bristol pipes are often identified by the distinctive cartouche or circular stamp located on the right side of the bowl, and by impressed initials stamped into the back of the bowl.

Archaeologists studying pipes use all of these different kinds of information as clues in interpreting the past of a city like New York. In examining pipes from the Broad Financial site in lower Manhattan, for exam-

ple, I noted that all of the pipes dating to around 1640 were characterized by Dutch bowl forms, and all of the identifiable makers' marks were from Amsterdam. The Dutch settlers were apparently getting their pipes exclusively from the mother country. In 1680, 14 years after the original British takeover of the island, New Yorkers were still smoking pipes that were made in Holland as well as in England. It was not until after 1710 that New Yorkers began to get their pipes exclusively from British manufacturers. This suggests that although the Dutch had fairly tight control over the trade into their colony, the same was not true of the English. In spite of British trade restrictions, New Yorkers apparently continued to import goods from Holland for more than 40 years after the British conquest of the city. Therefore, once we know when and where clay pipes were made, we can use that information to provide new insights into the economy of early New York.

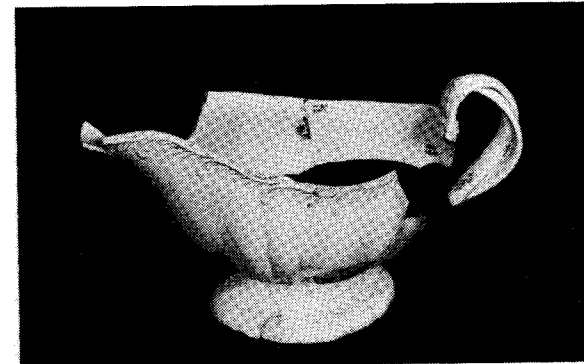


Clay pipes from the 17th, 18th, and 19th centuries.

## CERAMICS

Meta Janowitz

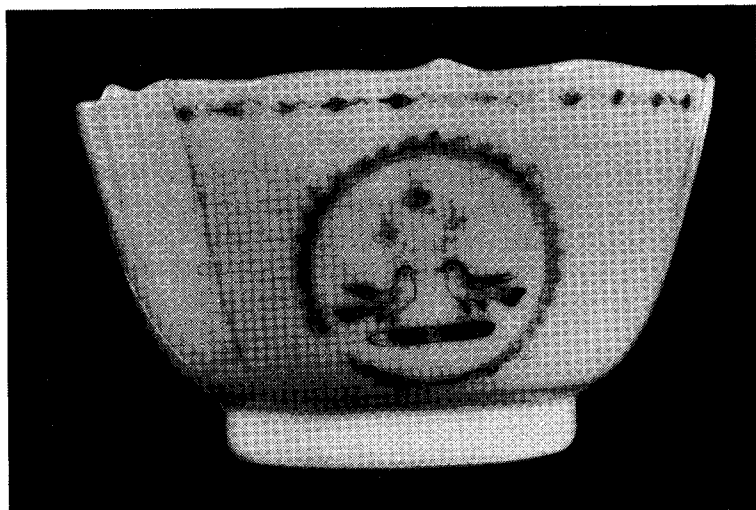
*Editors' note: Ceramics are not only among the most common artifacts found on archaeological sites of the historical period—they also provide many useful clues for archaeologists. Here, Meta Janowitz, ceramics analyst for Louis Berger & Associates, Inc. and faculty member of the School of Visual Arts, shows how researchers combine their knowledge of the history of ceramics with the study of the ceramic fragments (or sherds) that they find to discover when people lived at a site, where their everyday household goods were made, and even what they ate and drank.*



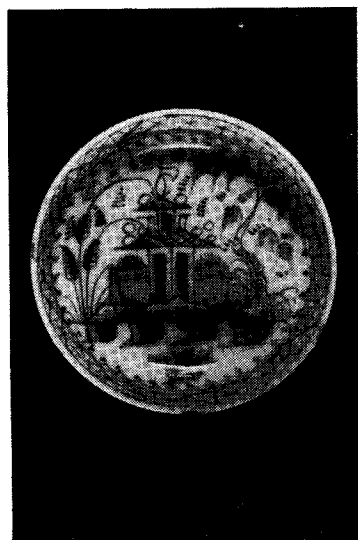
Creamware sauce boat in the feather-edged pattern, late 18th century.

Because of their durability and common use, ceramics are among the most ubiquitous artifacts that archaeologists find at historical sites. In New York we find them at sites dating from the earliest Dutch settlement until today. They are important to archaeologists because of the information they convey about the people who made and used them.

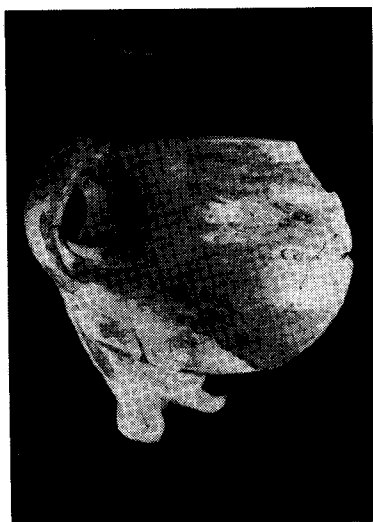
Early Dutch settlers in 17th-century New Amsterdam used the same kinds of ceramics that they had used at home. Unlike their English contemporaries, who were still using wood and metal vessels at the table and used ceramics only in the dairy, the Dutch had



Chinese export porcelain tea bowl with "lovebird" motif, c. 1795.



Blue painted pearlware saucer, late 18th century.



Dutch pipkin or small cooking pot, red earthenware, 17th century.

already developed a strong ceramic industry which produced household goods. Most 17th-century Dutch ceramics were delftware (made of tin-glazed earthenware) as well as red- and buff-bodied coarse earthenwares. The Dutch role as the middle-men of international trade was expressed in their ceramics—they imported stonewares from the nearby Rhine Valley as well as porcelains from distant China and Japan. Seventeenth-century Dutch genre paintings provide testimony to the wide variety of the ceramics the Dutch used at home: delft dishes and bowls, earthenware pitchers and pipkins (small, three-footed pots), and stoneware jugs, as well as the continued use of metal plates. We know that the Dutch who settled in New Amsterdam used these same kinds of vessels because we have found examples of all of them at archaeological sites in lower Manhattan.

These excavations also show that New Yorkers continued to use similar kinds of ceramics even after the British takeover in the late 17th century. By then, however, there were also at least four or five potters making ceramics in New York City. Examples of their work have been excavated at the late 17th-century Lovelace tavern at the Stadt Huys Block site in lower Manhattan. There, archaeologists found lead-glazed red earthenware bottles made from clays probably from the New York area. These quart-size bottles were presumably used for serving wine to tavern customers.

During the early 18th century, England eclipsed the Netherlands as the western world's leading economic power, and Britain's developing ceramic industry began to dominate the world market. Archaeologists have shown that by the 1720s, British-made white salt-glazed stonewares, slip-decorated earthenwares, and tin-glazed "delftware" began to appear in British New York. In the 1760s, New Yorkers began to use the creamware vessels so successfully marketed in England by Josiah Wedgwood. Creamware sherds are one of the most common kinds of ceramics found on sites

dating to the late 18th century. These vessels were popular because they could appeal to all New Yorkers—plain white forms were inexpensive, while decorated forms were bought by those with more expensive tastes.

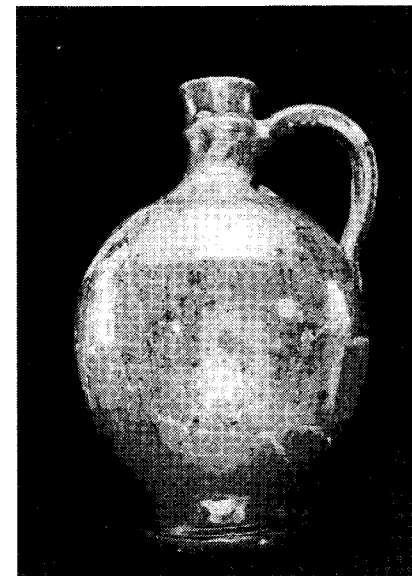
In the 1780s, British potters began to produce pearlware—a white earthenware with a bluish cast. These vessels were often decorated with blue motifs derived from the more costly Chinese porcelains which they blatantly strove to imitate. Like creamware sherds, fragments of pearlware are extremely common finds at late 18th- and early 19th-century sites. Beginning in the 1820s, pearlware vessels began to be replaced in popularity by heavier-bodied true white ones, called whitewares, which are still used today. The presence of whiteware sherds at a site tells us that people lived or worked there after around 1820. After the Civil War, American-made ceramics began for the first time to compete successfully with British-made wares for everyday use.

After the American Revolution, New York merchants continued to import most of their earthenware ceramics from England, but they also began to import oriental porcelains directly from China as well. In 1784, just after the war, The Empress of China sailed from New York, returning the following year with crates of porcelains as well as other goods. Porcelain teawares were very popular among wealthier New Yorkers. At the Assay site, excavations behind the home of Courtlandt Van Beuren, an early 19th-century merchant, revealed a large number of Chinese porcelain tea cups and saucers (some of which even displayed his monogram), attesting to the popularity of tea parties among the merchant class.

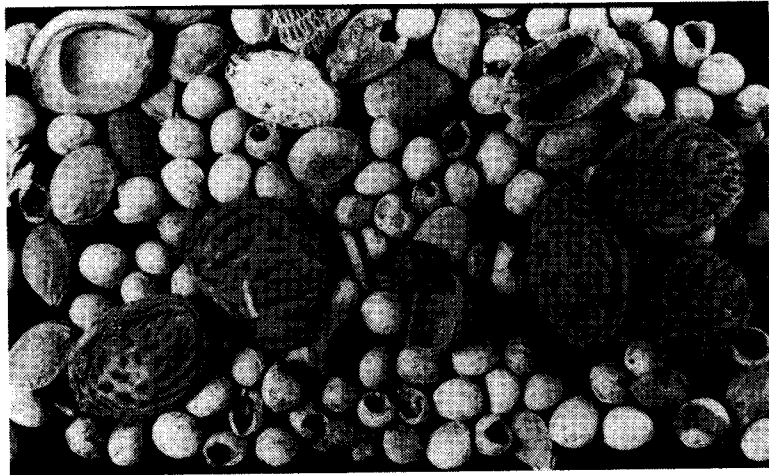
In addition to using ceramics to find out when a site was occupied and to discover contemporary patterns of trade, we also study them to understand their use within the home. For example, tea was introduced to Europe in the 17th century, but was quite expensive and

was generally consumed only in wealthier households—it was only in the 18th century that the price came down, and tea became more accessible to a larger audience. The increasing presence of teawares on sites in New York during the 18th century shows that the custom of taking tea also became more common in this colony during the same period.

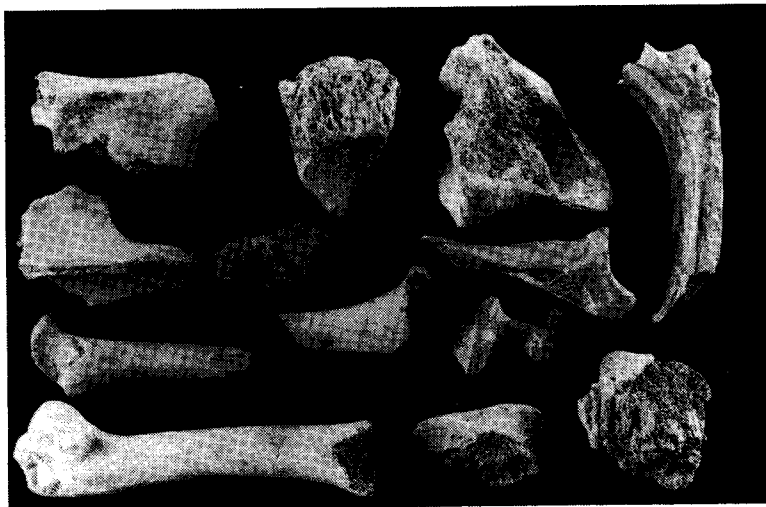
Ceramics are important in fulfilling a number of basic needs in food preparation, consumption and storage. They are thus one of the necessities of daily life. The presence of these everyday but important objects gives us much useful information about early New York.



Red earthenware wine bottle, probably made in New York, the Lovelace Tavern, late 17th century.



Pits, seeds, and nutshells from the 75 Wall Street Site.



Butchered bone from the 75 Wall Street Site.

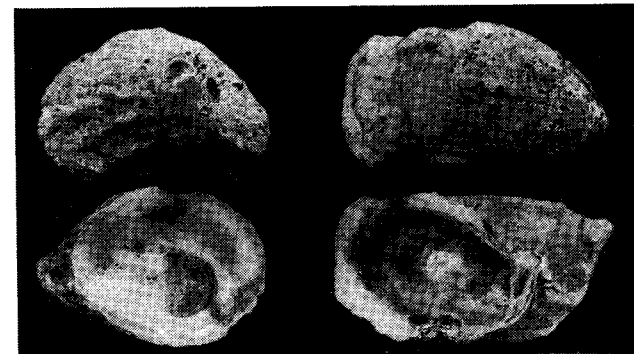
## FOOD

Nan A. Rothschild

*Editors' note: When people think of artifacts, they tend to think of objects such as ceramics and tobacco pipes that people made. However, as Nan Rothschild, a professor at Barnard College, demonstrates below, natural objects like animal bones are equally important for they can provide significant clues about daily life in the past.*

New York City developed from a small trading post to a great international city in a relatively short time. As a society becomes increasingly urban, many changes take place in the lifestyles of its inhabitants. Along with population increase, new political, social, and economic institutions appear. Many other, smaller changes take place in details that reflect the quality of daily life. It is the particular strength of archaeology to yield insights into the course of change in these details, supplementing information from documents and written history.

Archaeology, however, does not present a complete picture of the past; the forces of physical decay affect the recovery of materials used by earlier residents. And not every human activity is reflected in material re-



Oyster shell, commonly found at New York sites.

mains. In order to make use of archaeological data, we must first make a leap of faith and accept the fact that culture is an integrated whole, and that the things people build, make, use, leave behind, and throw away reflect other aspects of their lives. Having made that leap, a great deal of information can be derived from archaeological data—even from such seemingly insignificant data as broken animal bones.

Since 1979, archaeologists have been able to excavate a number of sites in lower Manhattan, in the area of the original colonial settlements of New Amsterdam and New York. The excavations yielded more than a million artifacts. Some of these artifacts can be interpreted to find about the diet of early New Yorkers. We have found tens of thousands of animal bones, more than a ton of oyster and clam shells, as well as countless seeds, primarily from raspberries and strawberries, but also melons, other berries, peaches, and cherries. My own focus has been on reconstructing the colonists' diet. We have analyzed ten to fifteen thousand bones from three sites—the Stadt Huys Block, 7 Hanover Square, and Telco Block sites—to look at this issue.

We know that Europeans coming to the New World arrived with a set of food preferences. They brought with them pigs, chickens, cattle (for milk and cheese as well as meat), and sheep. We also know that duplication of their traditional diet faced some difficulties: for example, letters back to the Netherlands complained that a significant number of the early cattle died. We have some documentary information on food habits from descriptions of banquets (obviously not typical food events) and travellers' accounts recording meals eaten and the great abundance of wild foods. We have cookbooks from the late 18th century onwards, but they are difficult to interpret as models of diet. We also have some paintings, especially those of Vermeer, that portray foods, but again we do not know whether those

foods portrayed were eaten in the New World, and if so whether they were available to all.

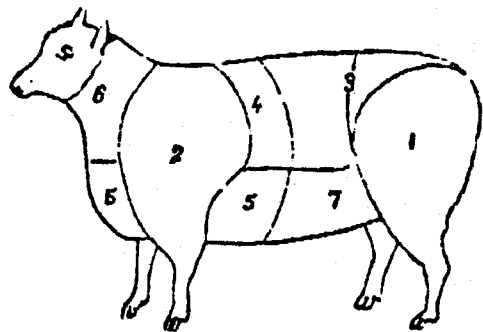
The analysis of the food bone has been very interesting. Some of the results were anticipated, such as, for example, the importance of domestic mammals—cattle, pigs, and sheep—throughout the colonial period. We can tell that there was a core diet centered around one or more of these mammals, fish, and chicken. Fish was an extremely important component of colonial foodways, followed by birds, both domestic (chicken, duck, goose, and turkey) and wild (shorebirds and songbirds). We also recovered bones from deer, squirrels, and hares, and from rats, cats, and dogs, which we hope were not eaten. Passenger pigeon bones were plentiful, and several types of turtles were eaten by early New Yorkers. Evidence of the consumption of wild species gradually disappears over time as the expanding city eliminated their habitats, although some elite families continued to eat wild game and birds.

More surprising were some of the alterations in diet over time as revealed by the analysis of food bone. For example, the type of fish most commonly eaten changes drastically during our period of interest. Sheepshead was by far the most popular fish until 1700. After the second half of the 18th century, they were rarely eaten by New Yorkers and are not found in New York waters today. Other changes in fish consumption relate to the development of a deep-water fishing industry, encouraged and supported by the awarding of prizes for the largest catch of certain types of fish (especially large and plentiful ones like cod).

The increasing importance of fish may be related to economic factors, notably a depression that followed the French and Indian Wars. Fish, and particularly shellfish, were often thought of as the food of the poor, but they seem to have been important in all socio-economic sectors. There was a general trend for less expensive

meats (and fish and chicken) to become increasingly important as time progressed.

One of the more interesting potential insights from the analysis of food is its relationship to socio-economic or ethnic factors. We have, for example, some food deposits that can be identified as deriving from specific households. While these do not allow at present an examination of ethnic food preferences, we are able to look at the differences between merchant families' food habits and those of artisans or shopkeepers. While our sample is small, it is clear that merchant families ate better than other families, but did not necessarily eat the same foods. Some ate more meat, while others preferred choicer cuts of meat, in combination with a variety of delicate wild birds. Boardinghouse food was dominated by chicken and fish, and shopkeepers and artisans ate a less costly group of foods than merchants. All deposits that we have analyzed suggest a rather plentiful amount of meat, although the relationship between bone quantity and meat quantity is not a simple one.



- |                   |                              |
|-------------------|------------------------------|
| 1. Leg of Mutton. | 5. Breast of Mutton.         |
| 2. Shoulder of "  | 6. Brag " (end of the neck). |
| 3. Loins of "     | 7. Flank "                   |
| 4. & 6. Neck of " |                              |

Diagram of a sheep, showing 19th century cuts of meat.

Further analysis of food remains will provide even more information about daily life, and about the adjust-

ments necessary in the food procurement and distribution system as the city expanded. It is clear that the increasing population would have required more efficient food provisioning; we can also tell that increasing specialization occurred among provisioners. Professional butchers replaced home butchers and became more efficient, using the saw instead of the cleaver to cut smaller, more standardized pieces of meat. Fishing became a profession. And consumers continued to adjust their taste to reflect style and availability as well as nutrition. Early residents may not have been concerned with cholesterol and calories, but eating well has always been important to New Yorkers.

## TOYS

Roselle E. Henn

*Editors' Note: Of all the artifacts that archaeologists find, toys are among the most touching. They bring to mind the generations of children who grew up in the city as well as the lighter moments of grown-up life. As Roselle Henn, archaeologist with the U.S. Army Corps of Engineers, shows, toys evoke a sense of play in the past that otherwise is too easily overlooked.*

The clay marble is irregular, its lumpy glaze a mottled brown. Once, small fingers held it tightly, as the circle of intent observers crowded nearer. It was aimed, eyes squinting, with fierce concentration, and shot, accompanied by the crowd's shouts of success and groans of defeat.

\* \* \*

The broken doll has delicately molded features, and wears traces of enamel on her porcelain brow and lips. In times past, she was dressed in the fashion of the day. Perched delicately on a tiny chair, she was served with miniature cups and dishes at dolls' tea parties.

\* \* \*

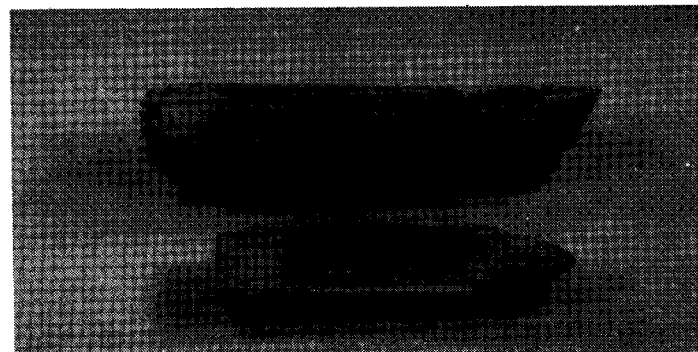
The props in these two hypothetical scenes of play, the marble and the doll, have been buried in silence for many years. Broken, discarded, or lost, they became part of the archaeological record. Now recovered from that silence, these objects still resonate with faint echoes of marble shooting and dolls' tea parties. They represent some of the oldest kinds of toys known, for marbles date back at least to Roman times and dolls to ancient Egypt.

It is remarkable to consider that marbles and dolls are common in New York City's archaeological sites, and in fact have been recovered from all five boroughs.

When toys are recovered archaeologically, they become rich sources of information about the past. Their value is enhanced when we can link them to specific times, places, and people. In this context, toys evoke musings about the past. At the Assay site in the Wall Street area, near the heart of the city's 19th-century port, such a moment occurred when archaeologists uncovered the roughly-carved hulls of two toy wooden boats dating to the 1820s. We paused to wonder who had carved them, where they had once sailed, and who had watched them founder and sink. It was a clear reminder that families had once lived in what is now the center of the financial world.

When considered as a group, toys can be used to monitor changing styles and fashion. Nineteenth-century porcelain dolls, for example, were usually made with molded hairdos in the style of the day.

Many old toys have been carefully preserved and can be seen in museums today. However, most of the toys now in museum collections were treasured heirlooms of the well-to-do, and not subjected to the rough-and-tumble play of every day. The toys in archaeological collections, on the other hand, were heavily used, and broken, lost, or discarded by the children of the poor and rich alike.



Hand-carved toy wooden boats, early 19th century.

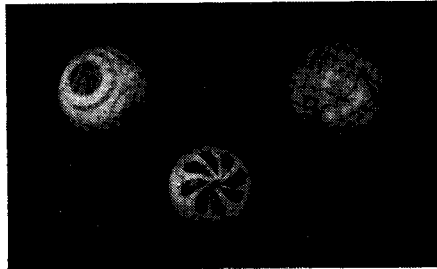
Games, toys, and children's play vary greatly not only in different segments of the same society, but also



through time. Here in New York, before the Industrial Revolution, children's toys were often simply miniature replicas of adult tools. Play was largely a way of learning the skills necessary for adulthood.



Wooden dice, late 18th century.



Porcelain marbles late 19th century.

Toys were also used in adult games, which frequently involved gambling. Ceramic gaming pieces found at the Broad Financial site in downtown Manhattan present the earliest evidence that we have of recreation among the city's 17th-century settlers. Archaeologists cannot always tell if an adult or a child used a particular toy. For example, dice and marbles excavated in New York could have been used by either.

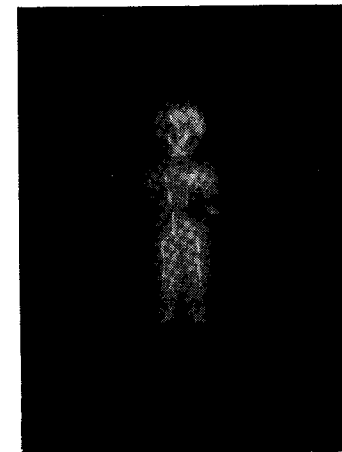
In the mid-19th century, toy manufacture boomed. Toys were no longer as frequently made by hand—they were mass-produced to be bought, first, for upper class children and, then, for those of the middle class. In addition, there was a proliferation in the kinds of toys being manufactured, paralleling the shift to Victorian attitudes toward children and childhood. As the length of childhood became extended and the child's world separated from adult life, more and different kinds of toys became popular. Advertising, well established by the end of the century, in turn created new markets for new toys.

Children's toys are also interesting to archaeologists because adults purposefully selected those they thought appropriate. In their selection, adults drew upon their own cultural values to decide on a toy suitable for a particular child—for his or her sex, age, and

future aspirations. Children absorbed these values as they played with the toys. When toys recovered from archaeological sites can be linked to families of known economic or ethnic background, we can use them to reconstruct underlying cultural values regarding social roles.

In analyzing the results of an excavation in a backyard at the Freundlich site in Brooklyn Heights, archaeologists were able to show that before the mid-19th century, children did not usually play in the backyard at all. By dating the toys that they found scattered across the yard, the archaeologists learned that it was only in the late 19th century that children began to use the yard for play. Before then, the yard was a utility area, where the household's outhouse and cistern for storing water were located. The household also occasionally disposed of its trash in pits they dug in the yard.

Much remains to be learned about the children of New York City's past. Through the continued excavation of urban sites and the study of archaeologically recovered toys, we gain fresh insights into not only their own lives and experiences, but also the hopes and aspirations of their parents.



Porcelain doll, late 19th century.

## BOATS

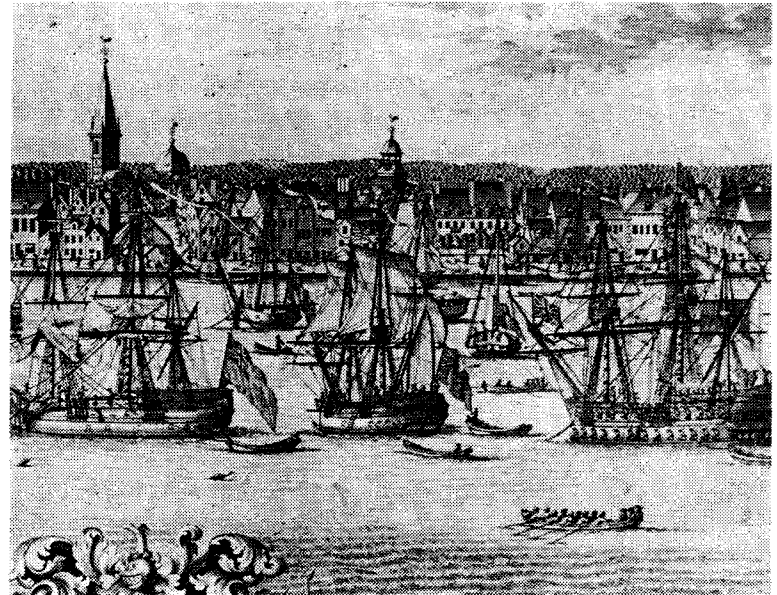
Joan H. Geismar

*Editors' note: When people think of archaeological finds in the city, they tend to think of such small artifacts as sherds and arrowheads. However, as Joan Geismar, an archaeological consultant with extensive experience in city projects, shows, we often find artifacts that are much grander in scale—the foundations of 17th-century buildings, 18th-century wharves, and even, most dramatically, buried ships and boats.*

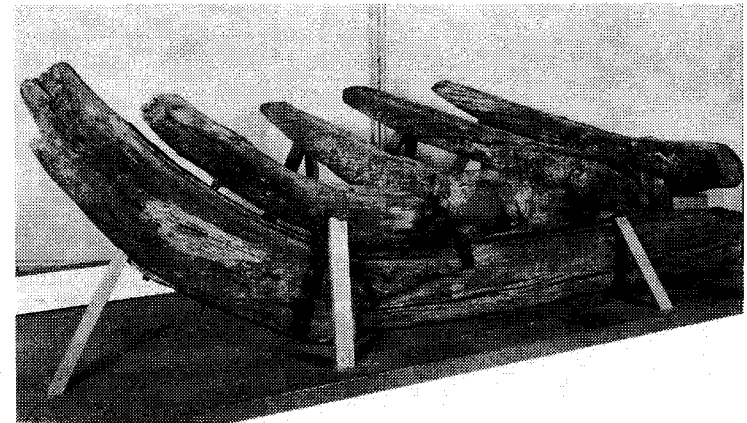
Boats\* have played an integral role in New York City's growth and development, much as they have in every other seaport city in the world. But beyond this, they provide spectacular clues to the past for archaeologists.

Obviously, boats and ships brought Manhattan's earliest European explorers to its shores, among them Giovanni da Verrazzano in 1524, and Henry Hudson eighty-five years later. Verrazzano's French ship, Dauphine, is relatively obscure, while Hudson's Half Moon is quite well known. Within five years of Hudson's historic voyage, Adriaen Block, the Dutch explorer, and his crew arrived on the Tijger (Tiger). Shortly after their arrival, the Tijger burned, and Block and his men spent the winter of 1613-14 constructing the smaller Onrust (Restless), the first ship built in this area. They therefore may have been the first Europeans to camp on Manhattan Island. However, the scanty records that document these events suggest they may not have occurred on Manhattan at all, but rather near Albany, about 150 miles up the Hudson.

By 1623, boats had begun to bring settlers and their belongings across a forbidding sea to an unknown land. They also transported the goods and entrepreneurs that created the New World trading center that ultimately grew into the city we know today.



Detail of the Burgis View of New York Harbor, 1717, showing ships contemporaneous with those found at the 209 Water Street and 175 Water Street Sites.



Charred ship's prow purported to belong to the Tijger.

Nearly 300 years later, during subway excavations in 1916, a charred ship's prow was unearthed near Dey and Greenwich Streets in lower Manhattan. Although perhaps apocryphal, many people believe that this relic is a remnant of Block's ship, the Tijger. Radiocarbon (C14) dates derived from wood taken from the ship's keel suggest it is between 650 and 380 years old, a time range that does not refute the Tijger theory. Since 1943, the ship's remains have been in the collection of the Museum of the City of New York and are now mounted in the ITT Gallery as part of "The Big Apple" multi-media show.

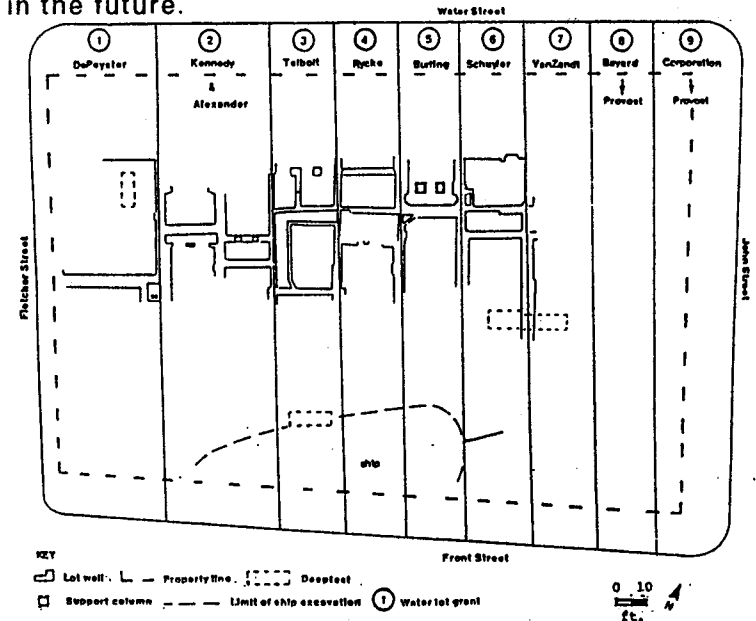
Over the years, there have been intermittent reports of boats and ships found at construction sites. For example, in addition to the possible remnant of the Tijger, there are reports of a ship found during the construction of an office building at Hanover Square in the 1960s. Even more recently, boat fragments were uncovered during the construction of the World Trade Center in the early 1970s. The city's construction workers undoubtedly know of many others.

Archaeologists are now beginning to take a closer look at boats and ships in order to learn about life in the emerging city. Their investigations in the South Street Seaport area have shown that these vessels not only contributed to the city's mercantile life, but also to its physical expansion through the role they played in land reclamation.

Excavations at two sites have revealed that when boats and ships were no longer functional as carriers, they were often incorporated into landfill. These ships provided the physical support needed to retain new land claimed from the rivers of the growing city. This same pattern has been found in Europe. For example, medieval landfill in Holland often includes ancient ships' timbers as well as entire vessels.

The first ship examined by New York City archaeologists was found at 209 Water Street, a building belonging to the South Street Seaport Museum. As a team of

archaeologists monitored construction work during basement alterations, the timbers and planking of a wooden ship were revealed. Experts think this find dates to the early-18th century. Since the vessel extended beyond the basement, full excavation would have threatened the buildings above and around it as well as the surrounding sidewalks and streets. Instead, construction was moved away from the ship's hull, which was then covered with clean sand; it remains preserved where it was found, perhaps to be excavated in the future.



Map of the 175 Water Street Site showing (bottom center) the location of the Ronson and backyard areas. The names at the top are those of landowners at the time the landfill was installed.

More recently, in January of 1982, archaeologists excavating at 175 Water Street came upon the port side of a large vessel buried in the landfill. The ship, a 92-foot derelict merchant vessel, was excavated by underwater archaeologists working in the unique situation of doing nautical archaeology on land. This unidentified ship—dubbed the Ronson after the developer for whom

the excavations were undertaken—represents a wonderful example of late 17th- or early 18th-century ship-building. It proved to be one of the most spectacular finds among the hundreds of thousands of artifacts recovered from the site.

The excavations revealed a well-made vessel that had been stripped of any valuable furnishings and hardware before she was scuttled. Although the Ronson's origins remain speculative, her trade routes were at least partially revealed to the archaeologists when analysis of shipworms embedded in her protective horse-hair-and-pitch sheathing determined they were toredos native to the Caribbean.

Like the rest of the material recovered from the 175 Water Street site—the dishes, bottles, wig curlers, animal bones, fruit and vegetable seeds, and other debris—this vessel offered information about life in 18th-century New York. The Ronson also graphically illustrates social interaction among five New York City merchants. These merchants, who owned the properties where the Ronson was later found, apparently agreed to incorporate the ship into a bulkhead system to support the landfill that formed the eastern boundary of their newly-made land.

Except for most of its starboard side (which was under Front Street, beyond the limits of the archaeological site), all details of the Ronson's construction were recorded. Each timber was numbered, photographed, and drawn before it was removed from the ground. In addition, all the timbers from the bow, which was fully positioned on the site, were retained and conserved. Now in the final stages of preservation, these timbers are housed at the Mariners Museum in Newport News, Virginia, where they will ultimately be reassembled and the bow displayed.

Ships were an essential element in the development of New York City. Archaeologists studying them today have learned that they provide romantic and spectacular clues to the city's unrecorded past. Undoubtedly,

many more boats and ships remain under the city's streets and buildings, situated on land claimed from the East and Hudson Rivers, waiting to be found by future archaeologists. They too will tell us about origins, journeys, and motivations, as well as about lost technologies of long ago.

*\* For the purpose of this article, "boats" and "ships" are used interchangeably to refer to seagoing craft.*

## AFTERWORD

The pace of New York is such that we usually focus on the present and the future, but forget about the past. We hope that this book serves as a reminder that buried beneath the city's streets, basements, backyards, and parks are sites that hold stories about New York's rich and varied past.

These sites, however, are endangered, and will never have their stories told if they are not protected. All construction projects that disturb the ground—be they for new buildings, roads, or even sewer lines—can destroy archaeological sites. Sites can also be destroyed by looters. Every time a site is destroyed, New York loses part of its past forever.

If you would like to find out more about archaeology in New York, there are several exhibits you might find interesting. In lower Manhattan, there are three permanent exhibits that focus on the city's archaeology:

- “New York Unearthed: City Archaeology,” at Seventeen State Street (at Pearl Street), a program of the South Street Seaport Museum. This exhibit provides an overview of archaeology in New York, including an ongoing conservation laboratory where technicians can be seen stabilizing the artifacts in the South Street Seaport Museum's archaeological collections, and a video showing how archaeologists work in the city.
- 85 Broad Street, at Pearl Street opposite Fraunces Tavern. This outdoor exhibit shows some of the 17th and 18th century features recovered by archaeologists at the Stadt Huys Block site in 1979-1980, before the modern building was constructed.
- “The Barclays Bank Site: 300 Years in the Financial District,” 75 Wall Street, east of Pearl Street. This window exhibit in the building plaza shows artifacts

and other materials from the 17th through 19th centuries that were uncovered in 1984 by archaeologists prior to the construction of the modern Barclays Bank building.

In addition, the National Museum of the American Indian, currently at Audubon Plaza (Broadway and 155th Street) has a number of exhibits on some of the early Native American groups of the greater New York area. The American Museum of Natural History also has an exhibit on early Native Americans of the eastern United States. The South Street Seaport Museum uses artifacts from the historical period in many of its temporary exhibits.

If you are interested in reading more about archaeology in New York, please see the list of suggested readings at the end of the book.

The Editors

## SUGGESTED READINGS

Brian M. Fagan's Archaeology: A Brief Introduction (4th edition, 1991, HarperCollins, N. Y.) provides an overview of the field of archaeology. There are several books that discuss the Native American people—variously known as the Delaware, the Munsee, or the Lenape—who lived in the New York area at the time of European colonization: Mark R. Harrington's The Indians of New Jersey: Dickon Among the Lenape (1963, Rutgers University Press, New Brunswick, N. J.), Reginald Pelham Bolton's New York City in Indian Possession (2nd edition, 1975, Indian Notes and Monographs, II (7), Museum of the American Indian, Heye Foundation, N. Y.), and Robert Steven Grumet's Native American Place Names in New York City (1981, Museum of the City of New York, N. Y.) and The Lenapes (1989, Chelsea House Publishers, N. Y.) The Lenapes is especially important because it chronicles this group's history up to the present day.

James Deetz's In Small Things Forgotten: The Archaeology of Early American Life (1977, Doubleday/Anchor, Garden City, N.Y.) gives an introduction to historical archaeology in New England. Ivor Noel Hume's A Guide to Artifacts of Colonial America (1980, Alfred A. Knopf, N. Y.) presents an overview of artifacts common at British colonial sites. Nan A. Rothschild's New York City Neighborhoods: The 18th Century (1990, Academic Press, San Diego) is a study of neighborhood formation in early New York from an archaeological perspective.

There are also a number of articles on archaeology in New York City. The magazine Seaport (South Street Seaport Museum) published several articles on archaeology in 1980 (Volume 14, no. 3), including Norman Brouwer's "The Ship in Our Cellar," Claudia Lorber's "We've Been Digging on the Shore of Dutch New York," and Susan Kardas and Edward Larrabee's "Landmaking in Lower Manhattan." The magazine

Archaeology (Archaeological Institute of America) has also published several articles on archaeology in the city, including Diana Rockman and Nan A. Rothschild's "Excavating New York: The Big Apple" (Volume 33, no. 6, 1980), Sherene Baugher and Frederick Winter's "Early American Gravestones: Archaeological Perspectives on Three Cemeteries of Old New York" (Volume 36, no. 5, 1983), Joan H. Geismar's "Digging into a Seaport's Past" (Volume 40, no. 1, 1987), and Frederick Winter's "Excavating New York City: Brooklyn" (Volume 34, no. 1, 1981) and "The Underside of Manhattan" (Volume 43, no. 3, 1990).

Reports on the archaeological projects required by the New York City-Landmarks Preservation Commission are available at the Municipal Reference and Research Center, Room 112, 31 Chambers Street, in Manhattan.

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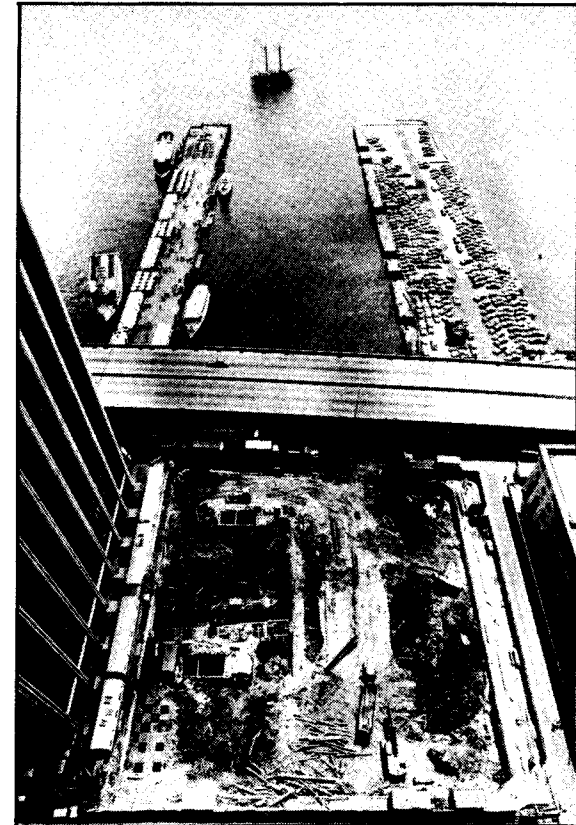
**Back cover: Detail of the Assay Site in lower Manhattan.**



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and  
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